

**Note on Engineering Details**

**No:** DWM-Schl-extern-005

**Title:** **Commissioning Manual for Wind Turbines,  
Test to verify independence of safety system**

**Ref.:** Germanischer Lloyd "Guideline for the Certification of Wind Turbines", Edition 2003 with Supplement 2004, Section 9.2.4.3(3) bullet no. 5

**Contact:** Reinhard Schleesselmann  
Email: reinhard.schleesselmann@gl-group.com, phone: +49 40 31106 116

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The GL Guideline (reference given in the headlines) requires in section 9.2.4.3(3) bullet no. 5 that the Commissioning Manual of a wind turbine shall contain a

"- test to verify that the functions responding to the activation of the safety system are independent of the control system."

Background of this requirement is the fact that the activation of the pitch systems and mechanical brake after triggering the safety system (e.g. pushing the Emergency Button) takes place through the safety system and the control system in parallel. That means the safety relay as well as the control computer activate simultaneously pitch and brake actions. A possible failure in one of the safety systems components (relay, cables, ...) could be overlooked during the tests in the commissioning procedure, because the turbine's functions will be performed perfectly also with possibly inactive safety system.

During this test the functions of the control system should be disabled by adequate manipulations. The safety system shall be triggered and the relevant turbine functions shall be observed. After the test all system functions shall be enabled again. The test shall preferably be performed with the turbine in switched off mode.

This test shall be witnessed by GL during the witnessing of the Commissioning Procedure as per section 1.2.3.3(3) of GL Guideline.

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Christian Nath  
Global Business Manager

Mike Woebbecking  
Head of Department

Reinhard Schleesselmann  
Author

An                      Dal                      Fab